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At Home on the Range in Iran—A Kashgai household moves to greener pastures, led by a young mother who guides her donkey with taps of a stick.

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JEAN AND FRANC SHOR

UMI

lies completely inland on the southeastern peninsula of Asia. The long S curve of Viet Nam wedges it against the roughly clover-leaf bulk of Thailand. South is Cambodia and on the northwest Burma and China meet.

Laos has been called a "land of the lotus eaters." Its mild climate and thinly settled territory make for a simple, uncomplicated existence. There are few such problems as food and housing shortages. Life is simple and unhurried.

Prisons Are Empty—Friendly and courteous, the people of Laos get along well among themselves, and with amicable neighbors. A short time ago prisons in Laos, with a capacity of 800, had plenty of room to spare—with only 18 wrongdoers in residence.

The current invasion comes from the northeast, from parts of Viet Nam held by communist rebels. Apparently tired of costly warfare against well-defended French and Viet Nam strong points, these communist forces turned to the sparsely settled land on their west and south.

With an area of 91,405 square miles, twice that of Pennsylvania, Laos has only about a tenth the population of the Keystone State. The majority of the people are Thai, relatives of their neighbors in Thailand, northern Viet Nam, southern China, and eastern Burma.

Laos is shaped rather like a crude hatchet, with the head in the mountainous region of the north, and the handle extending south into the plateau country of the peninsula.

French counsellors assist the Legislative Assembly which meets at Vientiane, the official capital. This town of about 20,000 people stands on the Mekong River which at that point forms the Laos-Thailand border. However, the king lives in a sprawling white palace (illustration, above) at Luang Prabang, the royal town, 130 airline miles to the north near the center of the hatchet head.

Jungle Road Passable when Dry—In dry weather the road between the seat of government and the king's residence can be traversed by motor vehicles, and they are only an hour apart by plane. The boat trip up the Mekong between the two cities takes 12 days in a motorized dugout canoe.

Laos is primarily an agricultural and forest country. Its chief crops are rice, tea, coffee, citrus fruits, and corn. Valuable timber, chiefly teak, is found in the forests of the north.

Mines in Cammon Province, southeast of Vientiane, which produced tin ore before World War II, are being put in repair. Lamé, a fabric of gold threads interwoven with silk or cotton, is a luxury item made in some Laos villages.

References—Laos is shown on the National Geographic Society's map of The Far East. Write the Society's headquarters, Washington 6, D. C., for a price list of maps.

For additional information, see "Indochina Faces the Dragon," in *The National Geographic Magazine* for September, 1952; "Portrait of Indochina," April, 1951; "Strife-torn Indochina," October, 1950; and "By Motor Trail Across French Indo-China," October, 1935. *(Back issues of the Magazine may be obtained by schools and libraries from the Society's headquarters at a special discounted price of 50¢ a copy, 1946 to date; 90¢, 1930-1945; $1.90, 1913-1929. Earlier issues at varied prices.)*

See also, in the GEOGRAPHIC SCHOOL BULLETINS, October 6, 1952, "Indochina Survives Another Summer of War."

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UMI

KENNETH P. LANDON

In the Royal Town of Luang Prabang, remote from the seat of government at Vientiane, the white palace of the King of Laos sprawls amid feathery palm trees. Like many Laotian buildings, it is of carved and painted wood. So untiring are the Laotians in the upkeep of their homes and pagodas that there is little effect of antiquity. Everything is so slicked up, so freshly painted, as to look slightly artificial, like a fair or a stage setting.

Bulletin No. 1, May 11, 1953

Placid Laos Is Newest Asian Battleground

INDOCHINA'S once placid kingdom of Laos is the latest target of communism in Asia. Like the New Mexico town of Taos, its name rhymes with house.

Laos is one of the Associated States of Indochina. These states, independent nations within the French Union, consist of the constitutional monarchies of Laos and Cambodia, plus the Republic of Viet Nam. The people of the latter state could tell their Laotian brothers what it is like to live in an embattled land. Armed communists arose in their country in 1946 and fighting has been continued ever since.

Laos, once known as Lane Xang, "land of the millions of elephants,"

B. ANTHONY STEWART

At Norman, Oklahoma, Student Activities Center Here—The Student Union Building of the University of Oklahoma rises in collegiate Gothic, the style of most of the university's buildings. David Ross Boyd, under whom the university opened in 1892 with four teachers in a rented store building, was a tree enthusiast. The shaded charm of the campus and of Norman's streets today are largely due to his pioneer interest.

During the Civil War much sympathy existed for the Confederacy and a number of tribesmen fought in its ranks. When peace came, the government at Washington said this "treason" voided the treaty giving the Indians this land forever. Demands soon mounted for opening the area to white settlers. The government finally bought a section from the Indians and opened it April 22, 1889, touching off a mad rush to stake out choice claims. Those who tried to get in sooner are responsible for the "Sooner State" nickname. More areas were opened later, each marked by wild rushes, the biggest one in 1893.

Oklahoma today has more than 63,000 proud and respected Indians. Some of the most prominent men the state has produced have part Indian blood. Among them was Oklahoma's best known and best loved son, the late Will Rogers, actor, humorist, and homespun philosopher. He rubbed elbows with the world's great but never lost the common touch. He liked to repeat: "All I know is what I read in the papers."

References—Oklahoma is shown on the Society's map of the South Central United States.

See also, "Skyway Below the Clouds," in *The National Geographic Magazine* for July, 1949; and "So Oklahoma Grew Up," March, 1941 (out of print; refer to your library).

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Bulletin No. 2, May 11, 1953

In the Sooner State, It's "Oklahoma, OK"

"OH, Sequoyah, where the wind comes sweeping o'er the plain!" That is the way the hit song in the celebrated musical production would have started if Oklahoma had qualified in its first statehood bid in 1905. Sequoyah was the name the people favored.

The state won out in its second try for admission to the Union two years later, but under a name made up of two Choctaw words meaning "Land of the Red People," a recognition of the role Indian tribes had played in advancing the cause.

Victory did not cause the people to forget their esteemed Sequoyah. If they could not name their state after him, they did the next best thing to honor this Cherokee educator and alphabet inventor. They saw to it that his statue got a highly prized place in Statuary Hall of the Capitol in Washington, D. C., to represent Oklahoma.

"The Land They Belong to"—Oklahomans call it grand, for today they have a bustling, energetic state, prospering on the income from its two chief sources of wealth—oil and agriculture. Oil has been the big bonanza for white men and red men alike. Some of the richest Indians in the country are to be found in Oklahoma, their big fortunes welling from oil strikes on their lands.

There is plenty of elbow room in Sequoyah's country; it could swallow both West Virginia and Pennsylvania within its borders and still have some space to spare. Its population of over two and a quarter million about equals the number of people crowded within the confines of Maryland, a state almost seven times smaller.

Oklahoma's panhandle gives the state one of the most easily identified outlines on the map. It resembles a saucepan with a bottom partly rusted away, or a meat cleaver with a badly nicked cutting edge.

Within these distinctive boundaries not all is the plains where wheat and corn grow "as high as an elephant's eye." There are the Ozark and Ouachita mountains, forest clad with a variety of good timber; the Arkansas Valley, good for farming, not to mention its oil and coal resources; the Central Plateau which is fine country for farms and ranches; the gently rolling Red River Valley area, most bountiful source of crops; and finally the Panhandle with its extensive cattle ranges.

Trail of Tears—If one begins Oklahoma's story after the United States became a nation, it opens with a doleful chapter—the forced migration there from ancestral lands in the southeastern states of the so-called Five Civilized Tribes—the Choctaws, Chickasaws, Creeks, Cherokees, and Seminoles. This was the "Trail of Tears" of 1825-42. These bygone DP's were promised that their new home (Indian Territory) was to be theirs "as long as grass shall grow and waters run."

The exiles went to work industriously. From previous contacts with white men, many of the Indians had become skilled craftsmen. They built schools, churches, and capitals from which each tribe governed itself. They were singing Indians and the state has not lacked for songs and ballads since. The people fared well.

In the north, the Atacama Desert is one of the driest spots on earth. Only an inch of rain may fall in a period of 20 years. But this wasteland is rich in minerals. A white earth lured men into this desolation. With machines, they scraped off the surface and sold it at high prices to be made into fertilizer. For the white earth was nitrate beds and from them once came almost all the world's supply. Nitrate is still one of Chile's important exports in spite of the fact that modern chemistry now produces it synthetically in other parts of the world.

The earth's greatest copper mine is Chuquicamata in north Chile. The region also produces iron, gold, silver, and borax. Arica, railroad outlet from Bolivia, and Antofagasta, chief port for export of minerals, are important towns on a coast swarming with fish.

South of Copiapó, about a quarter of the distance from north to south, the countryside begins to change. Central Chile, with its "Vales of Paradise," is the breadbasket of the republic. Climate and scenery resemble California's. Santiago, capital of Chile, stands on a wide plateau between the main range of the Andes and the lower Cuesta del Prado. This well-planned city of broad avenues and spacious parks was founded in 1541 by Pedro Valdivia, Spanish soldier associated with Pizarro. Three years later, Valdivia established Valparaíso, the port for the capital.

South of Concepción, coal and industrial center, begins the third great section of Chile. It is a cool, rainy region with lakes, dark forests, and swift tumbling rivers. These features remind many Austrian, German, and Swiss families who have settled there of their homelands. However, many of Chile's snow-capped mountains are volcanoes, whose smoking crests destroy their resemblance to the Alps of central Europe.

Trout are abundant in the streams and the snowy Andean mountainsides are a fine playground for skiing. In Chile, the winter sports season comes during the months when residents of the northern hemisphere are enjoying such summer activities as swimming and boating, while fishing is best in Chile when snow blankets New England.

Fringes into Islands—Off the foggy south coast, islands comprise a quarter of Chile's land area. Everywhere a storm-lashed sea thunders against bleak, rocky shores. Near by is Cape Horn, terror of the old sailing ships. Ice fields glint across the purple waters of the Straits of Magellan. Sheep graze rain-soaked pastures, and Punta Arenas stands lonely as the southernmost town of any size in the world.

Easter Island, 2,000 miles west of Chile and famous for its huge, mysterious stone figures, and the Juan Fernandez Islands, 500 miles west of Chile's coast, have been designated as national parks by the Chilean government.

References—Chile is shown on the Society's Map of South America.

For further information, see "Round the Horn by Submarine," in *The National Geographic Magazine* for January, 1948; "Capital and Seaport of Chile," October, 1944; "Chile's Land of Fire and Water" and "Sunshine Over the Chilean Lakes" (10 color photographs), July, 1941; "Inside Cape Horn," December, 1937 (out of print; refer to your library); and "Twin Stars of Chile; Valparaiso, the Gateway, and Santiago, the Capital," February, 1929.

See also, in the GEOGRAPHIC SCHOOL BULLETINS, May 1, 1950, "Shoestring Chile Is Child of Geography" and "Tierra del Fuego Goal of Modern Pilgrims," November 22, 1948.

UMI

FENNO JACOBS FROM THREE LIONS

On Their Way to the Port for shipment up the coast to Valparaíso, sheep overflow a street in Puerto Montt. In this fertile lake and forest district of south central Chile descendants of mid-19th-century German colonists raise large herds of sheep and cattle amid scenery much like that of their ancestors' homeland.

Bulletin No. 3, May 11, 1953

Road-Builders Link Chile's Varied Regions

IT is almost impossible to think of Chile without recalling its great length and varied geography. The South American republic, squeezed between the Andes range and the Pacific Ocean, barely averages 100 miles wide, but stretches 2,600 miles from north to south.

Short, swift streams course down the slopes of the snow-capped range and plunge into the ocean. Each has carved a valley which is separated from similar valleys by spur ridges. For this reason it has always been difficult to travel north and south in Chile. Road builders look at mountain after mountain to be crossed and shake their heads.

But with the vigor that has come to be associated with them, the Chileans are licking the road-building problem. They will spend $20,000,000 this year on highways to link together sharply contrasting sections. For, in addition to the piecemeal valleys of central Chile, where more than three-fourths of the 6,000,000 Chileans live, the country has two other distinct regions—one north and one south—which differ as greatly as do the Sahara and the Antarctic.

The largest city is Tehran (illustration, below) with a population of more than 1,000,000. It was here that Roosevelt, Churchill, and Stalin met for their Big Three Conference in 1943 to map the strategy for the final assault on Hitler's "European Fortress." Other cities are much smaller in size. Tabriz, the second largest, has about 214,000 people, followed by Isfahan, with 205,000. Most glamorous, and at the same time perhaps the most progressive city in Iran, is Shiraz, population 150,000, in the southern part of the country.

References—Iran may be located on the Society's maps of Asia and Adjacent Areas, and Southwest Asia.

For further information, see "We Dwelt in Kashgai Tents," in *The National Geographic Magazine* for June, 1952; "Journey into Troubled Iran," October, 1951; "Mountain Tribes of Iran and Iraq," March, 1946; and "Old and New in Persia," September, 1939.

See also, in the GEOGRAPHIC SCHOOL BULLETINS, October 13, 1952, "Herds and Hunting Support Iran's Kashgais"; and "Iran Again Plays Crossroads Role," February 12, 1951.

Vehicles of Many Shapes, Sizes, and Powers meet on the Maidan-i-Sepah, Tehran's principal square. Bicycles weave between motor buses. Handcarts casually cross the bows of American-made trucks. Old-fashioned horse-drawn carriages compete with modern automobiles. The large building housed a British bank, the only foreign banking concern in Iran, until July 30, 1952, when it was closed by the Iranian government.

JOSEPH COVELLO—BLACK STAR

UMI

Bulletin No. 4, May 11, 1953

Crisis-Ridden Iran Worries Free World

TROUBLE and discord have been the lot of oil-rich Iran ever since World War II. Now this ancient land of the Medes and Persians, often still called Persia, seems headed for a fresh crisis. A few months hence elections are scheduled which may decide the struggle between Premier Mohammed Mossadegh and the country's ruler, Shah Mohammed Riza Pahlevi.

Soon after World War II Russian troops moved into Iran's northwestern province of Azerbaijan on the pretext of an uprising there. The United Nations forced them to withdraw. After an uneasy interval, the Iranian parliament decided that the government should operate the oil industry, which British money had organized and developed. This brought on a grave international dispute still unsettled.

Riots and Uprisings—During all this period the people, numbering about 20,000,000, have been restless. They have taken part in regional uprisings, bloody riots, and industrial incidents. Farmers are discontented with the uneven distribution of land. Communists, who have a well-organized party in the country, continually fan the fires.

Iran's shaky condition today gives the free world a double cause for concern. The country's location makes it a land bridge for any aggression directed toward the vast subcontinent of India. Moreover, if a puppet communist government should gain control, the Soviet bloc would not only gain access to Iranian oil but also be in a position to threaten the entire Arabian peninsula whose oil fields produce a big part of the supply on which non-communist nations depend.

Continental France would fit almost three times into the area which this vital land bridge embraces. A very large portion of its 628,000 square miles is absolute desert. In the north, west, and south there are mountains. Tribesmen inhabiting these rugged regions are noted for their love of independence and resent government interference in their lives. It is estimated that some 2,000,000 Iranians are nomads and most tribesmen prefer the freedom of this way of life (illustration, cover).

Poor Soil, Little Rain—For the bulk of the population farming is the chief occupation, and, except in a few regions, it is hard work to wrest a bare livelihood from soil which receives insufficient rain and gets poor irrigation. Farm homes or villages are very often primitive and the standard of living is poor. Small farmers have to rent the land they till.

The economic condition of the nation has been steadily worsening, experts report, since 1951 when the oil industry was nationalized. The government not only lost all revenue once received under the previous agreement with the British refinery operators, but also has virtually failed in trying to sell the oil to other nations.

Next to oil, leading exports in the past have been carpets, cotton, grains, wool, hides, and drugs. During normal times the United States alone bought more than $3,000,000 worth of the famed Persian carpets a year. The most prized carpets, made on hand looms as in bygone days, come from Tabriz, Sultanabad, and Kerman.

the so-called worm that spins the lustrous fiber. During its five-week life, it gorges on mulberry leaves. Every day it eats its own weight in leaves. This diet fills two glands in its body with a gluelike fluid.

One day the silkworms, male and female, stop eating and start ejecting a tiny spray of this fluid. The air hardens it into a thread. The worm winds this thread about its body, making a tight cocoon composed of about a mile and a half of silk.

On the silk farm these cocoons are collected and laboriously unwound. If left undisturbed, the worm inside shrinks and turns into a small moth. The moth emerges from the cocoon and lays 300 to 450 eggs (illustration, next page). These eggs hatch into tiny worms an eighth of an inch long and the cycle begins all over again.

For the complete, fully-illustrated story of England's silk farm and the silkworm cycle, see "Silkworms in England Spin for the Queen," in the May, 1953, issue of *The National Geographic Magazine*. See also "Spain's Silkworm Gut," July, 1951; and "Strange Habits of Familiar Moths and Butterflies," July, 1927 (out of print; refer to your library).

Put Another Leaf on the Table, the Silkworms Are Here—These silk-producing caterpillars live on a one-dish diet—mulberry leaves. All their lives they eat nothing else. Their busy jaws champing the foliage make a sound like gentle rainfall. After a five-week gorge the worms start spinning cocoons around their bodies. The silk farmer unwinds these and retrieves a silk thread 1½ miles long from each cocoon.

EUROPEAN

JOHN E. H. NOLAN

From These Cocoons, Raised by English Youngsters, comes silk for the Queen's coronation, June 2. Inspired by near-by Lullingstone Silk Farm, many children have adopted silkworm raising as a hobby. They model their activities after Lady Hart Dyke, who revived the art in England in 1932. Lady Hart Dyke recalls that she herself became interested in silkworms at an early age. She started raising the "strange little creatures . . . as a hobby—and this grew into the small industry you see today."

Bulletin No. 5, May 11, 1953

English Silkworms Spin the Queen's Robe

"HER Majesty would be pleased if the silk for the Coronation Robe could be supplied by the Silk Farm at Lullingstone."

These words, received in a letter at a 500-year-old castle in Kent County, reminded the world that England indeed possesses a silkworm industry. Also, the request from Queen Elizabeth made Britons proud that their home-grown silk was good enough for their queen's robe.

At Lullingstone, 17 miles southeast of London, Lady Hart Dyke and her few workers bent to the task of filling the royal order. They remembered the silk farm's motto: "Patience and perseverance turn mulberry leaves into the silken robes of a Queen."

To Lady Hart Dyke goes credit for England's silk industry. Twenty years ago she began keeping silkworms to prove that an English product could be as fine as that from China, Japan, Italy, Spain, and other long-established silk-producing countries. She began with a handful of worms and mulberry leaves and converted the old castle and its grounds into a silk farm. She instituted the same methods that the Chinese had perfected 2,000 years before Christ.

Raw silk production anywhere depends on one of nature's strangest life cycles. The lowly caterpillar is the key member of the cycle; it is

EUROPEAN

A Silk Moth Emerges From the Cocoon *(above)*

It was a caterpillar when it built its silken cell. Changed to a moth, it breaks out to lay eggs *(upper right)* and start life's cycle again. From the eggs will hatch silkworms, which will build more cocoons from which more moths will emerge (Bulletin No. 5).

On a silk farm a few cocoons are allowed to mature in this fashion to insure a new generation of worms. All the rest go to stifling ovens where the insect inside is killed. Then the cocoons are soaked and unwound onto reels. The thread obtained is taken to mills to be woven into cloth.

When the moth pulls out of the cocoon it stains the threads so that they cannot be used in silk making. At the right a female, having laid her eggs, clings to the cocoon and awaits death.